

(19) World Intellectual Property
Organization
International Bureau



(43) International Publication Date
22 December 2005 (22.12.2005)

PCT

(10) International Publication Number
WO 2005/120823 A2

(51) International Patent Classification⁷: **B32B 13/02**

[US/US]; 805 NW 20th Terrace, Gainesville, FL 32603 (US).

(21) International Application Number:

PCT/US2005/004946

(74) Agent: **GREEN, Theodore, M.**; Akerman Senterfitt, Customer No. 30448, P.O. Box 3188, West Palm Beach, FL 33402-3188 (US).

(22) International Filing Date: 17 February 2005 (17.02.2005)

(25) Filing Language:

English

(26) Publication Language:

English

(30) Priority Data:

60/545,415

18 February 2004 (18.02.2004) US

(71) Applicant (for all designated States except US): **UNIVERSITY OF FLORIDA** [US/US]; 223 Grinter Hall, Gainesville, FL 32611 (US).

(81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SM, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

(72) Inventor; and

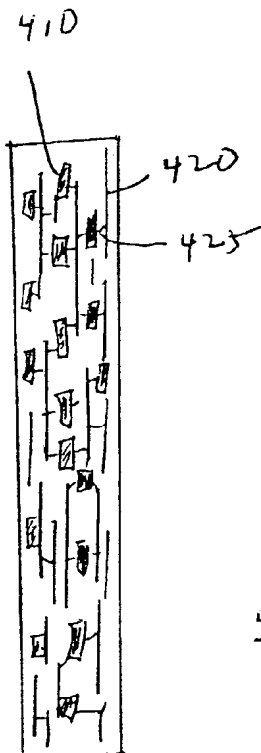
(75) Inventor/Applicant (for US only): **ALBA, Nicolas, A.**

(84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM,

[Continued on next page]

(54) Title: NON-COVALENT BONDING AGENT FOR CARBON NANOTUBE REINFORCED POLYMER COMPOSITES

(57) Abstract: A non-covalent bonding agent for carbon nanotube-reinforced polymer composites. The composites includes a polymeric solid state continuous phase and one or more carbon nanotubes dispersed in the continuous phase. The carbon nanotubes are joined to the polymer through the use of a bonding agent that mechanically couples the polymer chains to the carbon nanotubes. The bonding agent is non-covalently bonded to the carbon nanotube in a manner that retains substantially all of the properties of the carbon nanotube material and therefore permitting the carbon nanotubes to reinforce the polymer composite. The polymer composites may include a variety of different base polymers and may be used in a variety of applications.



WO 2005/120823 A2



ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM),
European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI,
FR, GB, GR, HU, IE, IS, IT, LT, LU, MC, NL, PL, PT, RO,
SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN,
GQ, GW, ML, MR, NE, SN, TD, TG).

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

Published:

- *without international search report and to be republished upon receipt of that report*